



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

either to the temperate or the southern fauna in those regions. It will naturally be asked, to what race can the river-drift man be referred? The question, in my opinion, cannot be answered in the present stage of the inquiry, because the few fragments of human bones discovered along with implements are too imperfect to afford any clue. Nor can we measure the interval in terms of years which separates the river-drift man from the present day, either by assuming that the glacial period was due to astronomical causes, and then proceeding to calculate the time necessary for them to produce their result, or by an appeal to the erosion of valleys or the retrocession of water-falls. The interval must, however, have been very great to allow of the changes in geography and climate, and the distribution of animals which has taken place—the succession of races, and the development of civilization before history began.

#### MICROSCOPY.<sup>1</sup>

PREPARATION OF MARINE ALGÆ.—It is not strange that an institution which produces more original work than any other in Europe, should be prolific in the *methods* of research.

To the many valuable methods originating in Professor Dohrn's Station at Naples, which have already been summarized in this journal, we have now to add another, which may be of considerable importance to zoölogists as well as botanists.

Working under the inspiration of Dr. Paul Mayer, Dr. Berthold<sup>2</sup> experimented with iodine and other re-agents on delicate marine algæ. The aim was to find solutions that would produce the least possible disturbance in the structure of the cell-protoplasm. It was found that satisfactory results could not be obtained with the ordinary aqueous solutions of picric acid, osmic acid, etc. The disturbance of the osmotic equilibrium, on transferring delicate cells from sea-water to fresh-water solutions, resulted in intra-cellular derangements. Parallel trials were therefore made of picric acid, osmic acid and iodine, three different solutions of each being made; one in distilled water, one in alcohol, and another in sea-water. The solutions in distilled water and alcohol proved almost worthless in each case, while each of the solutions in sea-water gave good results. It was found, curiously enough, that the protoplasm of the cells was more easily injured than the nuclei and karyokinetic figures:

Solutions of osmic acid and corrosive sublimate in sea-water gave good preparations, but the iodine solution was regarded as the best (re-agent).

A few drops of a saturated alcoholic solution of iodine,

<sup>1</sup> Edited by Dr. C. O. WHITMAN, Newton Highlands, Mass.

<sup>2</sup> Pringsheim's *Jahrbücher für wissenschaftliche Botanik*. Vol. XIII., pp. 704-5, 1882.

added to the sea-water, gives the desired results. The algæ remain in the solution  $\frac{1}{2}$ –1 minute, and are then transferred directly into 50 per ct. alcohol.

A NEW METHOD OF PRESERVING AND STAINING PROTOZOA.—For preserving these small organisms, various re-agents have been recommended. Certes<sup>1</sup> and Landsberg<sup>2</sup> employ osmic acid; Korschelt,<sup>3</sup> chromic acid or osmic acid; and Entz,<sup>4</sup> Kleinenberg's picro-sulphuric acid.

Finally, Blanc<sup>5</sup> recommends the following very dilute picro-sulphuric solution:—

Picric acid (saturated solution in dist. water).....	100 vol.
Sulphuric acid (concentrated).....	2 vol.
Distilled water.....	600 vol.

To this solution, which may be employed as it is for the larvæ of Echinoderms, Medusæ and Sponges, a little acetic acid (1 per ct.) is added for Rhizopods and Infusoria—two or three drops for 15 grams of the solution. The acetic acid is added in order to sharpen the outlines of the nuclei and nucleoli.

This liquid is preferable to osmic acid, because it does not render the objects non-receptive to staining fluids.

The entire process of hardening, washing, staining and mounting can be more expeditiously performed under the cover-glass than otherwise. The acid is allowed to work until the objects have become thoroughly yellow. The acid is then replaced by 80 per ct. alcohol, frequently renewed until the yellow color entirely disappears: 96 per ct. alcohol is next used, and then absolute alcohol.

The hardened objects may be stained with picro-carmin, or, better, with an alcoholic solution of safranin. Five grams of safranin are dissolved in 15 grams of absolute alcohol; the solution left standing a few days, then filtered and diluted with half its volume of distilled water.

This solution of safranin is preferable to picro-carmin, because it colors more quickly, and because one can so regulate its action as to give a sharp definition to the protoplasm or the nucleus.

After the object has been more or less deeply stained, according to the end in view, it is washed in 80 per ct. alcohol, which is renewed until a moment arrives when no visible clouds of color appear; at this moment the 80 per ct. alcohol is replaced with absolute alcohol, and this by clove oil.

As safranin is soluble in alcohol, the process of washing will of

<sup>1</sup> Compt. Rend. Acad. Sc., Paris, t. 88.

<sup>2</sup> Zoöl. Anzeiger, No. 114.

<sup>3</sup> Zoöl. Anzeiger, No. 109.

<sup>4</sup> Zoöl. Anzeiger, No. 96.

<sup>5</sup> Zoöl. Anzeiger, No. 129.

course remove or weaken the color ; but decoloration is gradual, so that one needs only to watch and apply the clove oil when the color has been reduced to the desired intensity. This process then, as has already been explained in the October number of this journal, p. 779, consists in *over-staining* and then *removing* the color to any desired degree. The process of decoloration is not entirely arrested by the application of clove oil, contrary to Blanc's assertion, hence it should be replaced by Canada balsam as early as possible. The same method is adapted to other microscopic animals.

—:o:—

### SCIENTIFIC NEWS.

— That measles is a disease of parasitic nature, has been held by Herr Tschamer, who found a small organism in the urine of persons having scarlatina, and the same in cases of measles and diphtheria. M. Le Bel, however, has lately found a vibron peculiar to measles ; it is a short, slightly curved rod, highly refringent, and very slow in movement. Its spores are held in a pouch of dead protoplasm, which gradually disappears. Usually these vibrions appear in the urine and during a few days at first ; they disappear when the fever comes. In one case another occurrence of spores was observed on the thirty-fifth day in an adult, and the vibron persisted. To have an idea of the intensity of the disease, it is well to examine the urine immediately after emission. Again, vibrions were found in the skin at the time of desquamation (scaling). M. Le Bel cultivated the organism in a mixture of urine and bouillon, and injected some of the liquid into a guinea-pig. The animal was not inconvenienced ; but on the tenth day thin vibrions were noticed in its urine ; they disappeared on the twelfth.

— Among the results obtained by the Prehistorical Commission of the Imp. Geological Institute of Vienna, in 1881, was the continued investigation of the Vypustek cave in Moravia, which brought to daylight a great number of interesting remains of mammals. The most remarkable among them is a nearly complete skeleton of a not yet full-grown diluvial "steinbock" (*Capra ibex* L.), exceeding considerably in size the actually living species. The Gutsch cave, also in Moravia, has been found to include bones of man, reindeer, Aurochs and cave-bear. A number of remains of cave-bear, and of small rodent mammals has been found in the Lettenmaier cave (Upper Austria) which, in prehistorical times, may have occasionally served as a hiding-place to human beings.

— Mr. Fr. Heger extended his researches to new-found burying-grounds near Hallein (Salsburg), a part of a ground, includ-